

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re:	Application No. 10/681,649)	<i>Confirmation No. 6105</i>
)	
Filed:	October 8, 2003)	
)	
Applicants:	Amy L. NEHLS et al.)	
)	
Title:	APPARATUS AND METHOD FOR SURFACE TREATMENT OF A FOOD PRODUCT)	This Appellants' Brief on Appeal was electronically filed on June 10, 2009 using EFS-Web.
)	
Art Unit:	1794)	
)	
Examiner:	Viren A. THAKUR)	
)	
Attorney Docket:	1410/67565)	
)	
Customer No.:	48940)	

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Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

Sir:

Applicants hereby petition under 37 CFR § 1.136(a) for a one-month extension of time in the above-identified application, up to and including June 11, to make this reply timely.

This Appeal Brief is filed in accordance with 37 C.F.R. § 41.37.

Application No. 10/681,649
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I. REAL PARTY IN INTEREST

Kraft Foods Holdings, Inc. is the assignee of the above-named patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to the Appellants, the Appellants' legal representative, or assignee that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-16 and 28-32 presently stand at least twice rejected by virtue of the Office Action mailed November 13, 2008. Claims 17-27 are withdrawn. Applicants appeal the final rejection of claims 1-16 and 28-32. Claims 1 and 28 are the pending independent claims at issue in this appeal.

IV. STATUS OF AMENDMENTS

No amendments have been entered subsequent to the entry of the Final Office Action mailed on November 13, 2008.

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V. SUMMARY OF CLAIMED SUBJECT MATTER

There are two independent claims pending in this appeal (claims 1 and 28).^{1,2} The claims are directed to methods of treating the outer surface of a food product.

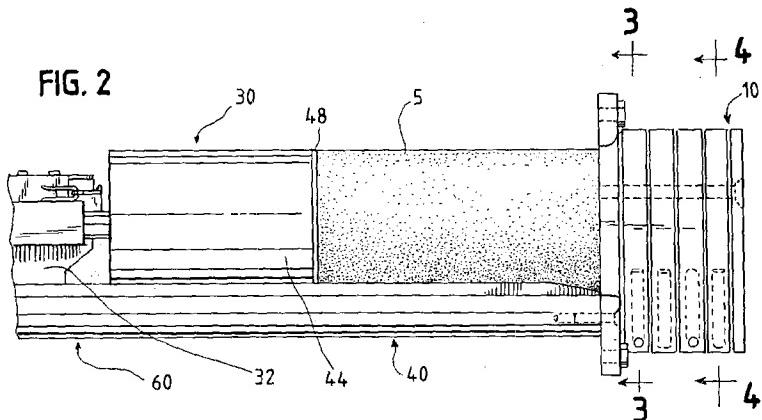
A. Independent Method Claim 1

A method is provided for treating an outer surface of a food product. The method comprises placing a food product having an outer surface on an advancement mechanism (e.g., see Fig. 2 below). The method also comprises providing a steam sleeve generating a flow of steam, the flow of steam having selected properties and used to treat the outer surface of the food product. The steam sleeve has an inner wall, an entrance, an exit, and an interior length defined by the distance between the entrance and the exit. The method further comprises passing the food product through the steam sleeve in a feed direction using the advancement mechanism. In this method, the food product is of a length greater than the interior length of the steam sleeve such that the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve. The method additionally comprises generating a flow of steam in the steam sleeve while the food product is being passed through the steam sleeve such that the flow of steam contacts the outer surface of the food product for treatment of the outer surface of the food product.

¹ None of the claims subject to the present appeal include any means-plus-function or step-plus-function claim recitations. Accordingly, as per 37 C.F.R. § 41.37(c)(1), there are no such recitations to be identified and mapped in a corresponding manner to the specification and drawings.

² It should be understood that this summary and map of the independent claims is only intended as a brief summary. Applicants do not represent or intend that the summary and map, or the accompanying references to the drawings and the specification, comprise an exhaustive presentation of the claims. As always, the claims are to be viewed and interpreted within the legal framework for claim construction, which may include the context of the entire specification as a whole.

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For convenience to the reader, independent claim 1 has been mapped below with relevant supporting citations to the specification.

<u>Claim 1</u>	<u>Specification</u>
A method of treating an outer surface of a food product, the method comprising:	Page 2, lines 11-13
placing a food product having an outer surface on an advancement mechanism;	Page 2, lines 13-14; Figs. 2, 5A, and 5B
providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;	Page 2, lines 14-23, page 17, lines 29-31, page 18, lines 25-29; Figs. 1, 2, 7, 14, 15, and 19
passing the food product in a feed direction through the steam sleeve using the	Page 2, lines 17-19, page 21, lines 7-11, page 24, line 32 – page 25, line 2; Figs. 2, 5A,

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advancement mechanism, the food product having a length greater than the interior length of the steam sleeve such that the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve; and generating the flow of steam in the steam sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.	and 5B Page 2, lines 14-23; Figs. 2, 5A, and 5B
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B. Claims 2-16 Depend From Claim 1

In one aspect, the step of generating the flow of steam in the steam sleeve while the food is passing therethrough, includes the step of circulating the flow of steam in the steam sleeve within an inwardly open channel formed in the interior wall of the sleeve; the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of steam and condensate from the sleeve (claim 2).³ In another aspect, the channel is generally circular and aligned perpendicular relative to a longitudinal axis of the food product such that the step of circulating the flow of steam in the steam sleeve within a channel includes the step of introducing the steam into the entrance of the channel with a tangential velocity so that a circular flow is generated and directs at least some of the steam condensation away from the outer surface of the food product (claim 3).⁴ In one aspect, the flow of steam in the steam tunnel is directed through a helical channel (claim 4).⁵ In another aspect, the inlet and outlet for the steam into the steam tunnel are position so that the flow of steam through the helical channel is

³ Specification at page 2, line 24 – page 3, line 2, page 4, lines 17-24; Figs. 1-4, 7-17, and 19.

⁴ Specification at page 3, lines 26-32.

⁵ Specification at page 2, line 29 – page 3, line 2; Figs. 1-4, 7-17, and 19.

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in a general direction opposite to the feed direction of the food product (claim 5).⁶ In yet another aspect, more than one set of helical channels are provided, each having their own inlet for introduction of steam into the sleeve and outlet for removal of steam from the sleeve (claim 6).⁷ In a further aspect, the positioning of the inlets and outlets of the more than one helical channels are positioned so that the flow of steam of one in one of the channels is in a general direction opposite to that of the feed direction of the food product and positioned so that the flow of steam in another of the channels is in the same direction as the feed direction of the food product (claim 7).⁸ In one aspect, a substantial seal is formed between the outer surface of the food product and at least one of the entrance and exit of the sleeve using a generally flexible wiper element (claim 8).⁹ In another aspect, the advancement mechanism continuously advances the food product during the generation of the flow of steam in the steam sleeve (claim 9).¹⁰ In one aspect, the sleeve includes multiple single-revolution channels which each have their own inlet and outlet (claim 10).¹¹ In another aspect, the passing of the food product in a feed direction through the steam sleeve occurs at a rate and the rate and the selected properties of the fluid are chosen to achieve a temperature of surface and immediate depth of the food product effective to provide slicability of the food product (claim 11).¹² In a further aspect, the passing of the food product though the steam sleeve using the advancement mechanism and generating the flow of steam in the steam sleeve while the food product is passing therethrough occurs immediately prior to a slicing station where an end of the food product is sliced (claim 12).¹³ In yet another aspect, a sealing gate is positioned adjacent the exit opening of the steam sleeve and the sealing gate is selectively shiftable between a sealing

⁶ Specification at page 4, line 25 – page 5, line 2.

⁷ Specification at page 5, line 3-6; Figs. 8-17.

⁸ Specification at page 5, line 7-21; Figs 8-17.

⁹ Specification at page 6, lines 1-15; Figs. 1 and 14.

¹⁰ Specification at page 6, lines 1-15

¹¹ Specification at page 6, lines 16-23; Figs. 8-17.

¹² Specification at page 14, line 12 – page 15, line 6.

¹³ Specification at page 14, 30-33, page 21, lines 7-11, page 25, lines 23-29; Fig. 19.

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position substantially closing the exit opening and an unsealing position allowing access to the exit opening (claim 13).¹⁴ In one aspect, the sealing gate is positioned in a sealing position when the food product enters the steam sleeve and is maintained in that position as a leading face of the food product is advanced through the sleeve during the step of generating the flow of steam in the steam sleeve for treatment of the leading face of the food product. The sealing gate is then shifted from the sealing to the unsealing position when the leading face of the food product has been advanced near the gate to allow the food product to be advanced through the exit opening of the steam sleeve (claim 14).¹⁵ In another aspect, the advancement mechanism is retracted away from a trailing face of the food product while the trailing face is within the sleeve for a period of time sufficient to provide steam treatment to the trailing face of the food product and prior to advancing the food product through the exit of the sleeve with the advancement mechanism (claim 15).¹⁶ In a further aspect, the steps of passing the food product in a feed direction through the steam sleeve using the advancement mechanism generating the flow of steam in the steam sleeve while the food product is passing therethrough occur immediately after a cooling operation where the outer surface of the food product is cooled (claim 16).¹⁷

C. Independent Method Claim 28

A method is provided for treating an outer surface of a food product. The method comprises placing a food product having an outer surface on an advancement mechanism (e.g. see Fig. 14 below). The method also comprises providing a steam sleeve generating a flow of steam, the flow of steam having selected properties and used to treat the outer surface of the food product. The steam sleeve has an inner wall, an entrance, an exit, and an interior length

¹⁴ Specification at page 24, line 24 – page 25, line 2; Fig. 19.

¹⁵ Specification at page 24, line 24 – page 25, line 14; Fig. 19.

¹⁶ Specification at page 25, lines 14-22; Fig 19.

¹⁷ Specification at page 24, lines 1-14.

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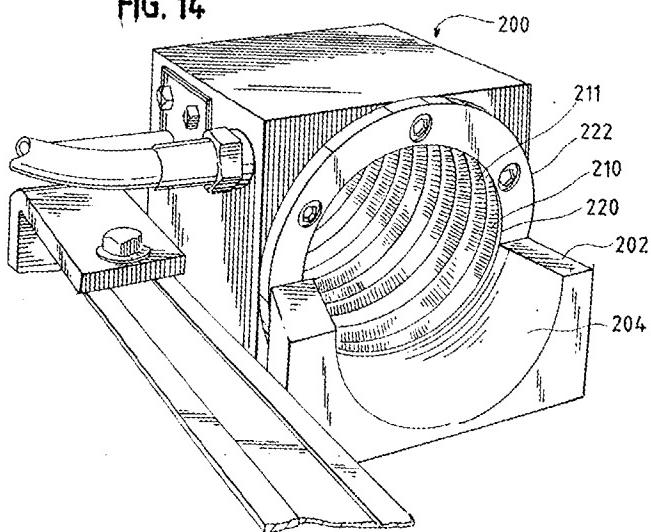
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defined by the distance between the entrance and the exit. The method further comprises passing the food product through the steam sleeve in a feed direction using the advancement mechanism. The method additionally comprises generating the flow of steam and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve. The channel is provided with an inlet for introduction of steam into the steam sleeve and an outlet for removal of steam from the steam sleeve. The channel is open to an interior of the sleeve while the food product is passing therethrough and the flow of steam contacts the outer surface of the food product for treatment of the outer surface of the food product.

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FIG. 14



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For convenience to the reader, independent claim 1 has been mapped below with the relevant supporting citations to the specification.

<u>Claim 28</u>	<u>Specification</u>
A method of treating an outer surface of a food product, the method comprising:	Page 2, lines 11-13
placing a food product having an outer surface on an advancement mechanism;	Page 2, lines 13-14; Figs. 2, 5A, and 5B
providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;	Page 2, lines 14-23, page 17, lines 29-31, page 18, lines 25-29; Figs. 1, 2, 7, 14, 15, and 19
passing the food product in a feed direction through the steam sleeve using the advancement mechanism; and	Page 2, lines 17-19; Figs. 2, 5A, and 5B
generating the flow of steam in the steam sleeve and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.	Page 2, line 14 – page 3, line 2, page 4, lines 17-24; Figs. 1-5B, 7-17, and 19

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D. Claims 29-32 Depend From Claim 28

In one aspect, the method further includes the step of at least partially blocking at least one of the entrance and exit of the steam sleeve using the food product during the step of generating the flow of steam in the steam sleeve (claim 29).¹⁸ In another aspect, the method further includes circulating the flow of steam in the channel around the perimeter of the product multiple times between an inlet and an outlet of the channel (claim 30).¹⁹ In yet another aspect, the method includes the step of circulating the flow of steam in a plurality of channels which are inwardly open to an interior of the sleeve (claim 31).²⁰ In a further aspect, the food product has a length greater than the interior length of the steam sleeve and the step of passing the food product in a feed direction through the steam sleeve further includes the step of simultaneously extending the food product beyond both the entrance and the exit (claim 32).²¹

E. Advantages of the Methods

The advantages provided by the Applicant's claimed methods (claims 1 and 28) include, for example, (1) applying steam to the product to achieve an extremely rapid thermal surface pasteurization and when the steam is provided at high velocities, increased rate of heat transfer can occur (e.g. see Fig. 18 below), (2) focusing the heat treatment on the surface may minimize adverse impacts on texture, flavor, or other properties of the food product, and (3) minimizing the amount of post-treatment cooling required to return the product to its original thermal state. Further, the advantages of having inwardly open channels formed on the interior of the sleeve (claims 2, 3, and 28) include, for example, that the flow velocity of the steam generates centrifugal forces that tend to keep the steam condensate moving to the outer part of the

¹⁸ Specification at page 15, line 31 – page 16, line 22.

¹⁹ Specification at page 12, line 21 – page 13, line 5; Figs. 7-13.

²⁰ Specification at page 12, line 21 – page 13, line 5; Figs. 7-13.

²¹ Specification at page 2, lines 17-19, page 21, lines 7-11, page 24, line 32 – page 25, line 2; Figs. 2, 5A, and 5B.

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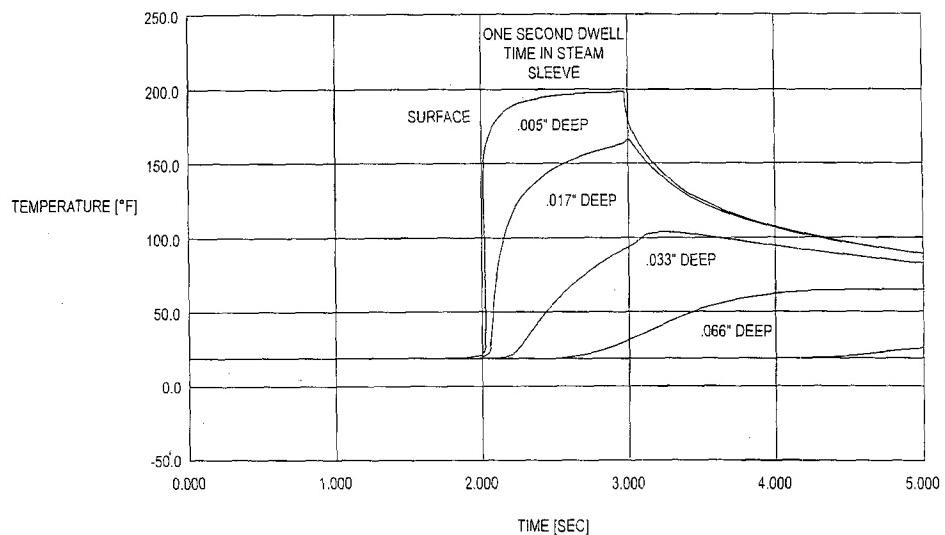
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channel and away from the surface of the food product. If the condensate were not moved away from the surface of the food product, it could act as an insulating barrier on the product surface, slowing heat transfer. Also, the removal of excess steam and/or condensate can desirably reduce moisture levels which can contribute to microbial activity.

THERMAL MODEL OF POTENTIAL
STEAM SLEEVE PROCESS

FIG. 18



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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Are claims 1, 8-9, and 11 unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 5,439,694 to Morris, Jr. (hereinafter "Morris, Jr.") in view of U.S. Patent No. 3,620,766 to Wallace (hereinafter "Wallace"), U.S. Patent No. 3,052,559 to Peebles (hereinafter "Peebles") and U.S. Patent No. 4,782,643 to Stark (hereinafter "Stark")?
2. Are claims 2, 28-29, and 32 unpatentable under 35 U.S.C. § 103(a) over Morris, Jr. in view of Wallace, Peebles, and Stark and in further view of U.S. Patent No. 3,005,716 to Moreland (hereinafter "Moreland")?
3. Are claims 3-7, 10, 12-16, 30, and 31 unpatentable under 35 U.S.C. § 103(a) over Morris, Jr. in view of Wallace, Peebles, Stark and Moreland and in further view of U.S. Patent No. 5,711,981 to Wilson (hereinafter "Wilson"), U.S. Patent No. 2,919,639 to Cronin (hereinafter "Cronin"), U.S. Patent No. 2,682,827 to Gressly (hereinafter "Gressly") and U.S. Patent No. 2,909,985 to Abrams (hereinafter "Abrams")?
4. Are claims 28-31 unpatentable under 35 U.S.C. § 103(a) over Wilson in view of Moreland?

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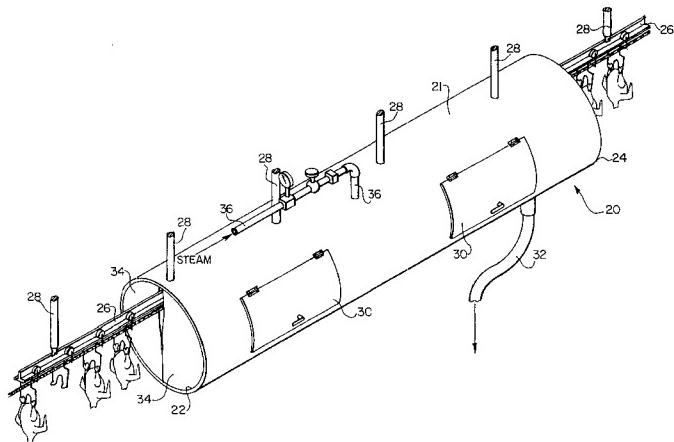
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VII. ARGUMENT

A. Applied References

1. Morris, Jr.

Morris, Jr. discloses a steam chamber for preheating and sterilizing exposed surfaces of animal carcasses immediately following slaughter and evisceration. The chamber 20 is provided with rubber doors 34 covering end openings 22, 24. The chamber is injected with steam through steam line 36 and condensate is removed through drain line 32. Animal carcasses are suspended from a conveyer line 26 and multiple carcasses are passed through the chamber for preheating and sterilization.



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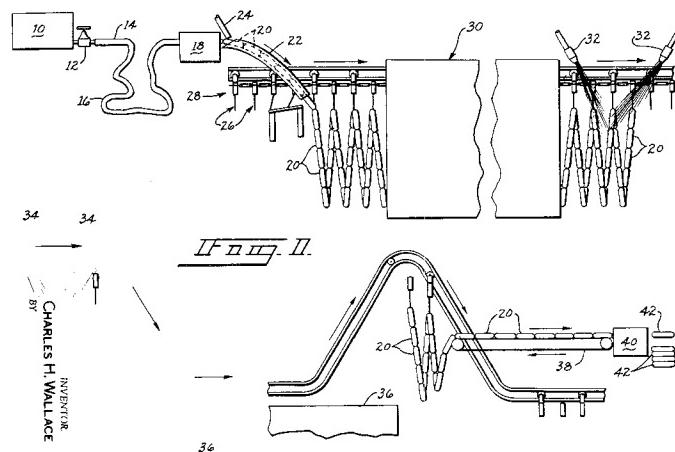
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2. Wallace

Wallace discloses a method for producing skinless wieners. Ground meat is pumped into a cellulose casing or tubing 16, which is subsequently fed through a tying machine 18 which ties the casing into individual uncured wiener sections 20 which remain connected in a continuous-end-to-end relationship throughout the subsequent processing steps. During processing, steps may include the spraying of acid within a spray hood 44 and the spraying of steam from spray nozzles 32 on the surface of the cellulose. The wieners remain in the cellulose casing throughout the processing steps until fed through a peeling machine 40 which removes the cellulose casing and leaving the individual wiener products 42. Thus, the outer surface of the wieners are not directly contacted.



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3. Peebles

Peebles discloses a sterilization process for viscous and paste-like food products. The disclosed process includes pumping the food product into a pliable, plastic container 11. The containers are then passed through a series of rollers, (e.g. 20, 28, 29, etc.) to cause circulation of the food product contained therein while the containers are passed through a housing having sterilizing 18A and cooling 18B sections. The food product is not contacted by steam in the sterilization section.

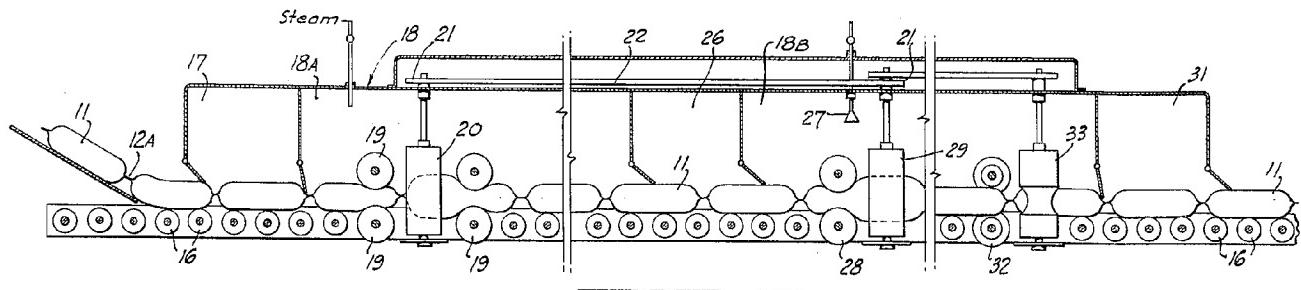
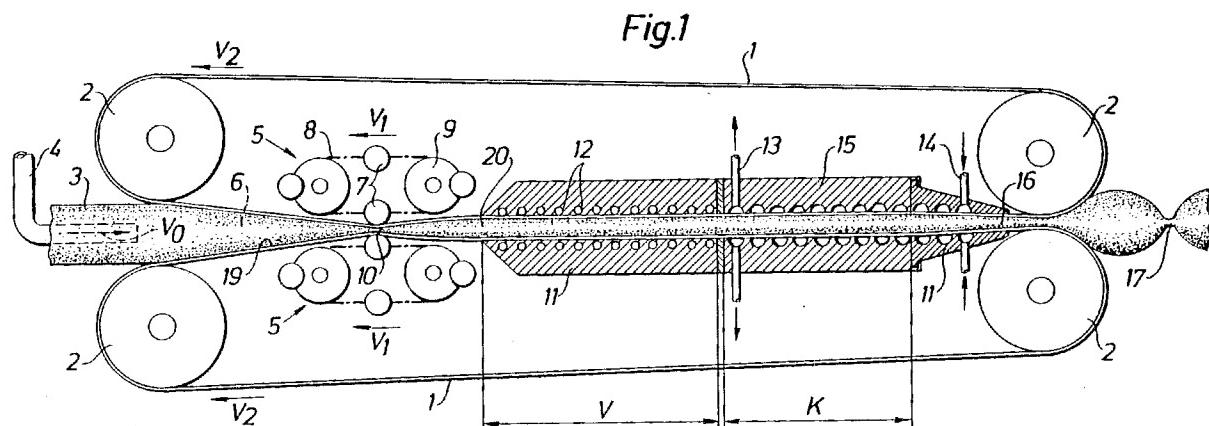


FIG. 2.

4. Stark

Stark discloses an arrangement for heat treatment and packaging of a liquid product.

The disclosure includes pumping the liquid product 6 into a tube of flexible material 3 which is then fed further into the arrangement through the use of a peristaltic pumping device 5. The shape of the tube is further dictated by the presence of steel bands 1 that aid in moving the tubing through the arrangement. As the tube containing the liquid product is passed through the arrangement, heat is generated in heating zones 50, for example by using induction coils 12 to induce eddy currents in the steel bands 1, which subsequently transfer heat by convection to the tube 3 and ultimately the liquid therein (Col. 10, lines 2-11). Similarly, ducts or loops 35 can be formed around the band 1 and are used to carry a heated liquid medium to supply heat to the bands 1 and by convection to the tube 3 and liquid 6 contained therein.



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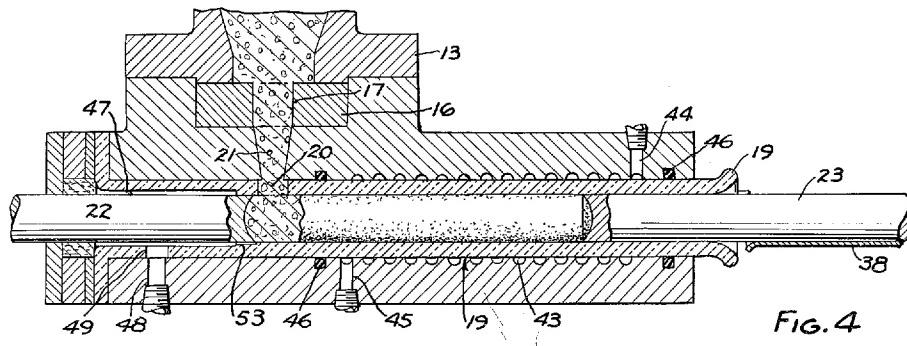
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5. Moreland

Moreland discloses an arrangement and method for making skinless sausages. The disclosure includes pumping a sausage emulsion through a tube 19 mounted in a mold body 15. The external surface of the molding portion of the tube through which the sausage emulsion passes is heated by circulating a heated liquid through a helical groove 43 on the inner surface of a cavity into which tube 19 extends.



6. Wilson

Wilson discloses a steam heating chamber 32, through which multiple individual meat pieces M can be passed. Wilson further discloses the steam chamber enclosure is provided with pressure retaining entrance 30 and exit 38 doors to maintain positive pressure in the steam chamber as meat enters and exits the steam chamber.

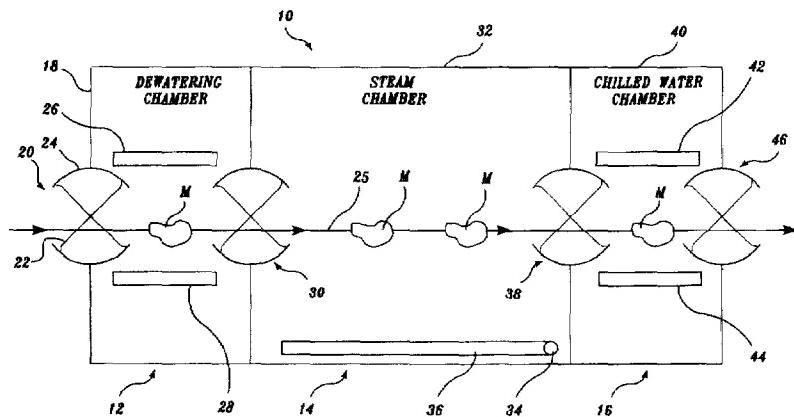
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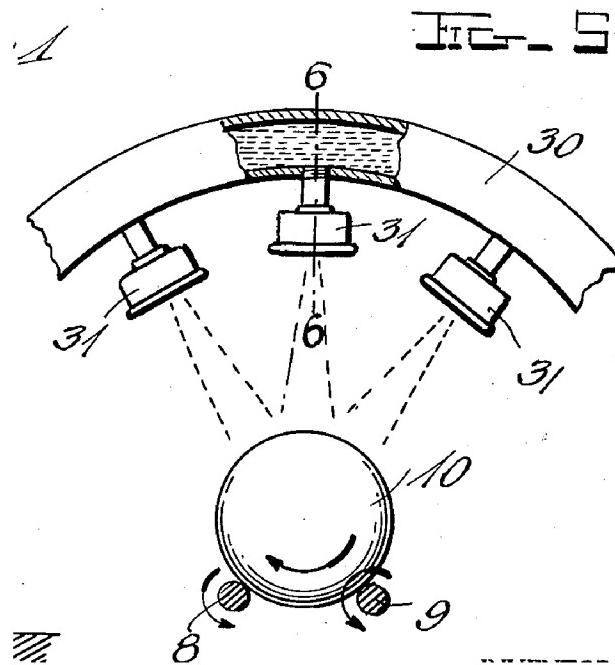
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7. Cronin

Cronin discloses spraying heated oil on eggs. It is disclosed to rotate the egg to expose new areas of the shell to the oil spray and to cool the portion of the shell heated by the oil by rotating it out of the spray.



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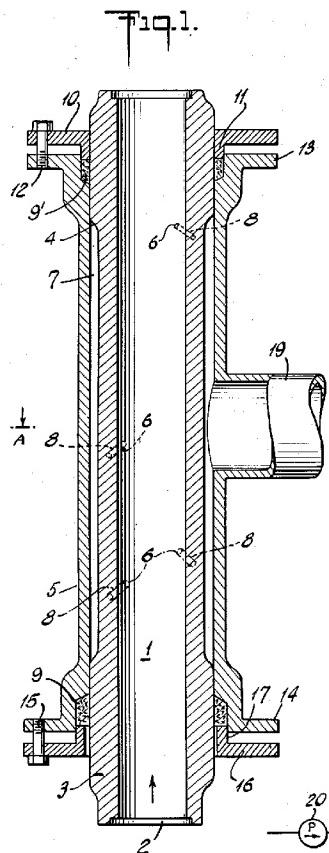
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8. Gressly

Gressly discloses a sterilization tube designed to prevent liquid particles from remaining in contact with hot metal components for extended periods of time. Gressly discloses arranging steam inlet passages that enter the product stream at an acute angle to a plane containing the longitudinal axis of the tube in order to increase the turbulence of the flow of the liquid stream passing through the tube and to heat the liquid stream throughout.



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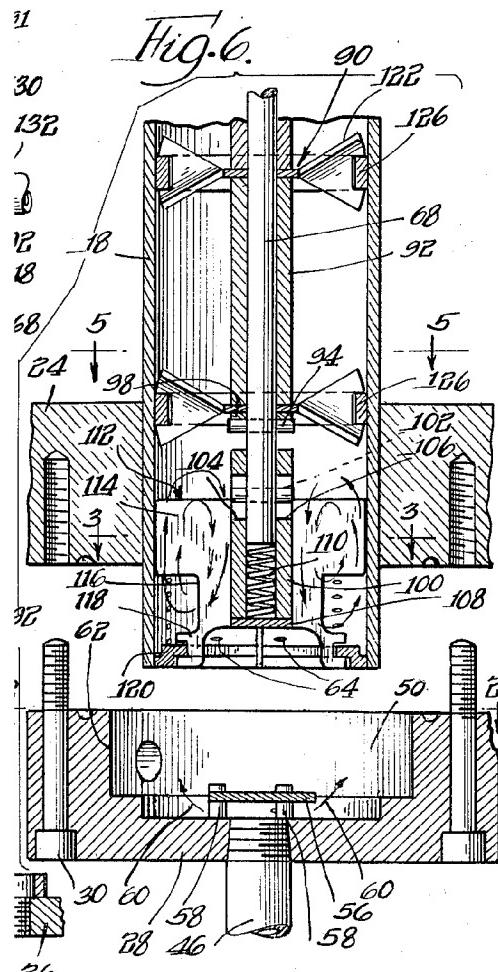
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9. Abrams

Abrams discloses a sterilizing apparatus including a mixing chamber 50 including tangentially oriented apertures. This apparatus is intended for sterilization of liquids within the container by injection of steam through the apertures, creating a circular motion of the liquid within the mixing chamber and mixing the steam and liquid to sterilize the liquid.



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B. Claims 1, 8-9, and 11 are Patentable Over Morris, Jr. in View of Wallace, Peebles, and Stark

Of claims 1, 8-9 and 11, only claim 1 is independent.

Claim 1 is patentable.²²

No *prima facie* case of obviousness has been established.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. MPEP 2143.03 “Distilling an invention down to the ‘gist’ or ‘thrust’ of an invention disregards the requirement of analyzing the subject matter ‘as a whole.’” MPEP 2141.02(II) The pending rejections do not show where the prior art teaches the following limitations even if the proposed combination of art is proper; thus, there is clear error in the rejection.

With respect to claim 1, the applied references fail to disclose the method of passing a food product through a steam sleeve, the food product having a length greater than the length of the steam sleeve, and contacting the outer surface of the food product with a flow of steam for treatment of the food product.

Morris, Jr. discloses a steam chamber for preheating and sterilizing exposed surfaces of animal carcasses immediately following slaughter and evisceration. The chamber 20 is provided with rubber doors 34 covering end openings 22, 24. The chamber is injected with

²² Claim 1 provides: A method of treating an outer surface of a food product, the method comprising: placing a food product having an outer surface on an advancement mechanism;

providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;

passing the food product in a feed direction through the steam sleeve using the advancement mechanism, the food product having a length greater than the interior length of the steam sleeve such that the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve; and

generating the flow of steam in the steam sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.

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steam through steam line 36 and condensate is removed through drain line 32. Animal carcasses are suspended from a conveyer line 26 and multiple carcasses are passed through the chamber for preheating and sterilization.

Wallace discloses a method for producing skinless wieners. Ground meat is pumped into a cellulose casing or tubing 16, which is subsequently fed through a tying machine 18 which ties the casing into individual uncured wiener sections 20 which remain connected in a continuous-end-to-end relationship throughout the subsequent processing steps. During processing, steps may include the spraying of acid within a spray hood 44 and the spraying of steam from spray nozzles 32 on the surface of the cellulose. The wieners remain in the cellulose casing throughout the processing steps until fed through a peeling machine 40 which removes the cellulose casing and leaving the individual wiener products 42. Thus, the outer surface of the wieners are not directly contacted.

Peebles discloses a sterilization process for viscous and paste-like food products. The disclosed process includes pumping the food product into a pliable, plastic container 11. The containers are then passed through a series of rollers, (e.g., 20, 28, 29, etc.) to cause circulation of the food product contained therein while the containers are passed through a housing having sterilizing 18A and cooling 18B sections. The food product is not contacted in the sterilization section.

Stark discloses an arrangement for heat treatment and packaging of a liquid product. The disclosure includes pumping the liquid product 6 into a tube of flexible material 3 which is then fed further into the arrangement through the use of a peristaltic pumping device 5. The shape of the tube is further dictated by the presence of steel bands 1 that aid in moving the tubing through the arrangement. As the tube containing the liquid product is passed through the arrangement, heat is generated in heating zones 50, for example by using induction coils 12 to induce eddy currents in the steel bands 1, which subsequently transfer heat by convection to the tube 3 and ultimately the liquid therein (Col. 10, lines 2-11). Similarly, ducts or loops 35 can

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be formed around the band 1 and are used to carry a heated liquid medium to supply heat to the bands 1 and by convection to the tube 3 and liquid 6 contained therein.

As none of the applied references, alone or in combination, disclose passing a food product through a steam sleeve, the food product having a length greater than the length of the steam sleeve, and contacting the outer surface of the food product with a flow of steam for treatment of the food product, there is a clear error in the rejection.

References cannot be combined where reference teaches away from their combination.

It is improper to combine references where the references teach away from their proposed combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983) MPEP 2145 X.D.2.

Morris, Jr. teaches that the individual carcasses are to be spaced at intervals along a conveyer line (Col. 3, lines 8-10) following slaughter and evisceration and that the carcasses are to remain in the steam chamber for a predetermined length of time before being moved out of the chamber (claims 1 and 3). Therefore, it would go against the disclosure of Morris, Jr. to have a carcass simultaneously extend beyond both the entrance and exit of the steam chamber as the dwelling time in the chamber would be required to ensure that the steam would contact all of the surfaces. This is apparent from the length of the apparatus of Morris, Jr. which is many times longer than the carcasses.

The Advisory Action mailed February 3, 2009 in response to the Amendment After Final states "claim 1 does not recite that the food is continuous but only that it extends beyond both an entrance and exit of the steam sleeve..." (Advisory Action, p. 2). The Applicants respectfully disagree and assert that the recitation of claim 1 stating "the food product having a length greater than the interior length of the steam sleeve such that the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve" clearly indicates that the food product continuous.

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The remaining references disclose the exterior surfaces of containers (as described above in regard to the Wallace, Peebles, and Stark references) being contacted by steam. The heat applied to the container is then transferred through the container to the product contained therein. The individual products of these references do not have the structural integrity to be contacted directly on their surface by steam and therefore these references teach away from directly contacting the surface of the product with steam. Therefore, it would be improper to combine these references as the carcasses of Morris Jr. are disclosed to be entirely within the steam chamber for treatment, not simultaneously extending both the entrance of and the exit during steam treatment.

Accordingly, claim 1 presents patentable subject matter. The remaining claims (8-9 and 11) are ultimately dependent upon claim 1 and, thus, should be viewed as allowable as well.

C. Claims 2, 28-29, and 32 are Patentable Over Morris, Jr. in View of Wallace, Peebles, and Stark and in Further View of Moreland

Of claims 2, 28-29 and 32, only claim 28 is independent.

Claim 28 is patentable.²³

²³ Claim 28 provides: A method of treating an outer surface of a food product, the method comprising: placing a food product having an outer surface on an advancement mechanism;

providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;

passing the food product in a feed direction through the steam sleeve using the advancement mechanism; and

generating the flow of steam in the steam sleeve and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.

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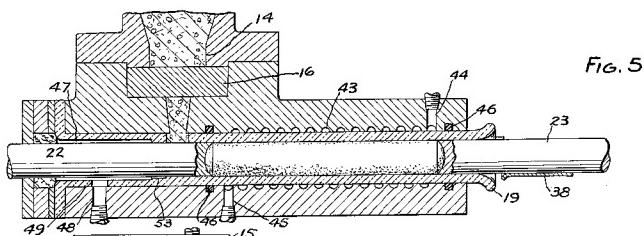
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With regard to claim 28, the proposed combination fails to disclose a method of treating an outer surface of a food product, the method comprising “generating the flow of steam in the steam sleeve and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product” as presently recited in claim 28.



The Office Action asserts that the Moreland reference teaches an inwardly open channel (Figure 3, item 43) through which a treatment fluid passes (Col. 2, lines 53-59) for the purpose of treating the surface of the article that comes into contact with the treatment fluid (Office Action, p. 6). As shown above in Figure 5 of Moreland, it is respectfully submitted that item 43 is neither inwardly open nor does the treatment fluid contained therein contact the surface of an article to be treated. Rather, the volume of groove 43 disclosed by Moreland is delimited by the exterior surface of the stationary tube 19. Further, heated liquid can then be circulated in this space to heat the external surface of the tube 19. Therefore, the groove 43 is not inwardly open to a steam sleeve and the surface of the sausage emulsion contained within the interior surface of the tube 19 is not contacted by the heated liquid.

The Advisory Action mailed February 3, 2009 asserts that "The channels, however, are clearly open inwardly regardless of the positioning of the stationary tube. The claim is not

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specific with respect to what is the channel inwardly open" (Advisory Action, p. 2). The Applicants respectfully indicate that claim 28 recites "the channel inwardly open to an interior of the sleeve while the food product is passing therethrough" and is therefore clear that the channel is open to the sleeve interior and in common with the same interior through which the food product is passing.

For all of the reasons discussed above in regard to claim, it is respectfully submitted that claim 28 is not obvious over the applied references. Accordingly, claim 28 avoids the prior art and presents patentable subject matter. The remaining claims (29 and 32) are ultimately dependent upon claim 28 and, thus, should be viewed as allowable as well.

Claim 2

The Office Action has rejected claim 2 for the reasons entered in the rejection to claim 28. The Applicants assert that for all of the reasons discussed as to claim 28, claim 2 is allowable as well.

D. Claims 3-7, 10, 12-16, 30, and 31 are Patentable Over Morris, Jr. in View of Wallace, Peebles, Stark, and Moreland and in Further View of Wilson, Cronin, Gressly, and Abrams

As claims 3-7, 10, and 12-16 depend from claim 1, they incorporate each and every aspect of claim 1 which Morris, Jr., Wallace, Peebles and Stark, as already noted in detail above, fail to meet. Accordingly, dependent claims 3-7, 10, and 12-16 are also patentable.

As claims 30 and 31 depend from claim 28, they incorporate each and every aspect of claim 28 which Morris, Jr., Wallace, Peebles, Stark and Moreland, as already noted in detail above, fail to meet. Accordingly, dependent claims 30 and 31 are also patentable.

E. Claims 28-31 are Patentable Over Wilson in View of Moreland

Of claims 28-31, only claim 28 is independent.

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With regard to claim 28, the proposed combination fails to disclose a method of treating an outer surface of a food product, the method comprising "generating the flow of steam in the steam sleeve and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product" as presently recited in claim 28.

The Office Action admits that Wilson fails to disclose the particular structure of the channel as recited in claim 28 and then details the missing portions of the structure as including "the channel inwardly open to an interior of the sleeve while the food product is passing there through" (Office Action, p. 14). It is respectfully submitted that, as discussed above, Moreland fails to provide this missing structure. As all of the recited structures are not disclosed in the cited references, it is respectfully submitted that claim 28 is not obvious and the Applicants respectfully request that this rejection be withdrawn.

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VIII. CLAIMS APPENDIX

1. (Previously Presented) A method of treating an outer surface of a food product, the method comprising:

placing a food product having an outer surface on an advancement mechanism;

providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;

passing the food product in a feed direction through the steam sleeve using the advancement mechanism, the food product having a length greater than the interior length of the steam sleeve such that the food product simultaneously extends beyond both the entrance and exit during at least part of the step of passing the food product through the steam sleeve; and

generating the flow of steam in the steam sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.

2. (Previously Presented) A method of treating an outer surface of a food product in accordance with claim 1, wherein the step of generating the flow of steam in the steam sleeve while the food product is passing therethrough includes the step of circulating the flow of steam in the steam sleeve within an inwardly open channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve.

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3. (Original) A method of treating an outer surface of a food product in accordance with claim 2, wherein the channel is generally circular and aligned perpendicular relative to a longitudinal axis of the food product, and the step of circulating the flow of steam in the steam sleeve within a channel includes the step of introducing the steam into the entrance of the channel with a tangential velocity effective to generate a circular flow directing at least some of the steam condensation away from the outer surface of the food product.

4. (Original) A method of treating an outer surface of a food product in accordance with claim 3, wherein the step of circulating the flow of steam in the steam sleeve comprises directing the flow of steam through a helical channel.

5. (Original) A method of treating an outer surface of a food product in accordance with claim 4 wherein the step of directing the flow of steam through a helical channel includes positioning the inlet and outlet so that the flow of steam from entrance to exit of the sleeve is in a general direction opposite to that of the feed direction of the food product.

6. (Original) A method of treating an outer surface of a food product in accordance with claim 4, including the step of providing more than one set of helical channels each having their own inlet for introduction of the steam into the sleeve and outlet for removal of the steam from the sleeve.

7. (Original) A method of treating an outer surface of a food product in accordance with claim 6, including the step of positioning the inlet and outlet of one of the helical channels so that the flow of steam is in a general direction opposite to that of the feed direction of the food product and positioning the inlet and outlet of another of the helical channels so that the flow of steam is in the same general direction as that of the feed direction of the food product.

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8. (Original) A method of treating an outer surface of a food product in accordance with claim 1, wherein the step of passing the food product in a feed direction through the steam sleeve using the advancement mechanism includes the step of forming a substantial seal between the outer surface of the food product and at least one of the entrance and exit of the steam sleeve using a generally flexible wiper element.

9. (Original) A method of treating an outer surface of a food product in accordance with claim 1, wherein the step of passing the food product in a feed direction through the steam sleeve using the advancement mechanism includes the step of continuously advancing the food product with the advancement mechanism during the step of generating the flow of steam in the steam sleeve.

10. (Original) A method of treating an outer surface of a food product in accordance with claim 3, wherein the step of circulating the flow of steam in the steam sleeve within a channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve includes the step of forming multiple single-revolution channels each having their own inlet and outlet.

11. (Previously Presented) A method of treating an outer surface of a food product in accordance with claim 1, wherein the passing of the food product in a feed direction through the steam sleeve using the advancement mechanism occurs at a rate, the method including the step of selecting the rate and the selected properties of the fluid to achieve a temperature of surface and immediate depth of the food product effective to provide for slicability of the food product.

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12. (Original) A method of treating an outer surface of a food product in accordance with claim 1, wherein the steps of passing the food product in a feed direction through the steam sleeve using the advancement mechanism generating the flow of steam in the steam sleeve while the food product is passing therethrough occur immediately prior to a slicing station where an end of the food product is sliced.

13. (Original) A method of treating an outer surface of a food product in accordance with claim 12, wherein a sealing gate is positioned adjacent the exit opening of the steam sleeve, the sealing gate being selectively shiftable between a sealing position substantially closing the exit opening and an unsealing position allowing access to the exit opening.

14. (Previously Presented) A method of treating an outer surface of a food product in accordance with claim 13, including the following steps:

positioning the sealing gate in the sealing position when the food product enters the steam sleeve;

maintaining the sealing gate in the sealing position as a leading face of the food product is advanced through the sleeve during the step of generating the flow of steam in the steam sleeve for treatment of the leading face of the food product; and

shifting the sealing gate from the sealing position to the unsealing position when the leading face of the food product has been advanced proximate thereto to allow the food product to be advanced through the exit opening of the steam sleeve.

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15. (Previously Presented) A method of treating an outer surface of a food product in accordance with claim 1 including the step of retracting the advancement mechanism away from a trailing face of the food product while the trailing face of the food product is positioned within the steam sleeve for a period of time sufficient to provide steam treatment to the trailing face of the food product prior to advancement of the food product through the exit opening of the steam sleeve with the advancement mechanism.

16. (Original) A method of treating an outer surface of a food product in accordance with claim 1, wherein the steps of passing the food product in a feed direction through the steam sleeve using the advancement mechanism generating the flow of steam in the steam sleeve while the food product is passing therethrough occur immediately after a cooling operation where the outer surface of the food product is cooled.

17. (Withdrawn) An apparatus for treating the surface of a food product with fluid, the apparatus comprising:

a sleeve having an entrance opening and an exit opening, the entrance and exit openings being sized approximately the same as a cross-sectional profile of the food product;

a plurality of channels formed in an interior of the sleeve between the entrance opening and the exit opening, the channels capable of directing the flow of fluid at least partially around an outer portion of the food product, and at least one of the channels having a fluid inlet and at least one of the channels having a fluid outlet to permit the introduction and removal of the fluid into the sleeve.

18. (Withdrawn) An apparatus in accordance with claim 17, wherein at least some of the plurality of channels are connected in a generally helical arrangement providing a continuous fluid flow path from the fluid inlet to the fluid outlet.

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19. (Withdrawn) An apparatus in accordance with claim 18, wherein at least two generally helical arrangements of the plurality of channels are provided forming two separate continuous fluid flow paths from fluid inlets to fluid outlets.

20. (Withdrawn) An apparatus in accordance with claim 17, wherein a seal element is provided proximate at least one of the sleeve entrance and exit openings, the seal element having an opening substantially the same size as the cross-sectional profile of the food product and smaller than the opening of the at least one of the sleeve entrance and exit openings.

21. (Withdrawn) An apparatus in accordance with claim 20, wherein the entrance opening and exit opening have a shape generally the same as the seal element opening shape.

22. (Withdrawn) An apparatus in accordance with claim 20, wherein the entrance opening, exit opening, and seal element openings are all either circular, D-shaped, rectangular, oval or square.

23. (Withdrawn) An apparatus in accordance with claim 17, wherein the sleeve is formed of a plurality of plates arranged in an adjacent manner, the plates each having an opening therethrough and one of the plurality of channels formed adjacent the opening in an interior of the plate, the channels each having an inlet and an outlet and generally surrounding the plate opening.

24. (Withdrawn) An apparatus in accordance with claim 23, wherein the channel inlets and outlets of adjacent plates are staggered to define flow paths in adjacent plates having alternating directions.

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25. (Withdrawn) An apparatus in accordance with claim 23, wherein seal elements are positioned between adjacent plates and at least partially define the channels.

26. (Withdrawn) An apparatus for treating an outer surface of a food product, the apparatus comprising:

means for generating a flow of steam in an interior of a steam sleeve having an entrance and an exit, the steam having selected properties to treat the outer surface of the food product; and

means for advancing a food product having an outer surface in a feed direction through the interior of the steam sleeve between the entrance and exit thereof, the flow of steam in the steam sleeve contacting the outer surface of the food product while the food product is passing therethrough at the predetermined temperature for treating the outer surface of the food product.

27. (Withdrawn) An apparatus for treating an outer surface of a food product in accordance with claim 26, including means for directing steam condensation away from the outer surface of the food product.

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28. (Previously Presented) A method of treating an outer surface of a food product, the method comprising:

placing a food product having an outer surface on an advancement mechanism;

providing a steam sleeve for generating a flow of steam having selected properties to treat the outer surface of the food product, the steam sleeve having an interior wall, an entrance and an exit, the steam sleeve having an interior length defined by the distance between the entrance and the exit;

passing the food product in a feed direction through the steam sleeve using the advancement mechanism; and

generating the flow of steam in the steam sleeve and circulating the flow of steam in the steam sleeve within a channel formed in the interior wall of the sleeve, the channel having an inlet for introduction of the steam into the sleeve and an outlet for removal of the steam and condensate from the sleeve, the channel inwardly open to an interior of the sleeve while the food product is passing therethrough, the flow of steam contacting the outer surface of the food product for treatment of the outer surface of the food product.

29. (Previously Presented) The method of claim 28, further including the step of at least partially blocking at least one of the entrance and exits of the steam sleeve using the food product during the step of generating the flow of steam in the steam sleeve.

30. (Previously Presented) The method of claim 28, further including circulating the flow of steam in the channel around the perimeter of the product multiple times between an inlet and an outlet of the channel.

31. (Previously Presented) The method of claim 28, including the step of circulating the flow of steam in a plurality of channels inwardly open to an interior of the sleeve.

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32. (Previously Presented) The method of claim 28, wherein the food product has a length greater than the interior length of the steam sleeve, and the step of passing the food product in the feed direction through the steam sleeve further includes the step of simultaneously extending the food product beyond both the entrance and exit.

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IX. EVIDENCE APPENDIX

None.

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X. **RELATED PROCEEDINGS APPENDIX**

None.

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XI. CONCLUSION

In view of the foregoing discussion, Applicants respectfully request reversal of the rejected, pending claims.

Respectfully submitted,
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